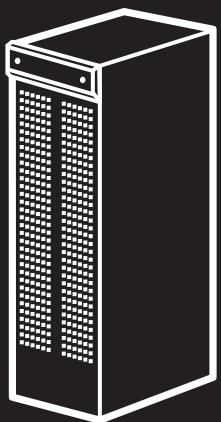




AIS® 3000

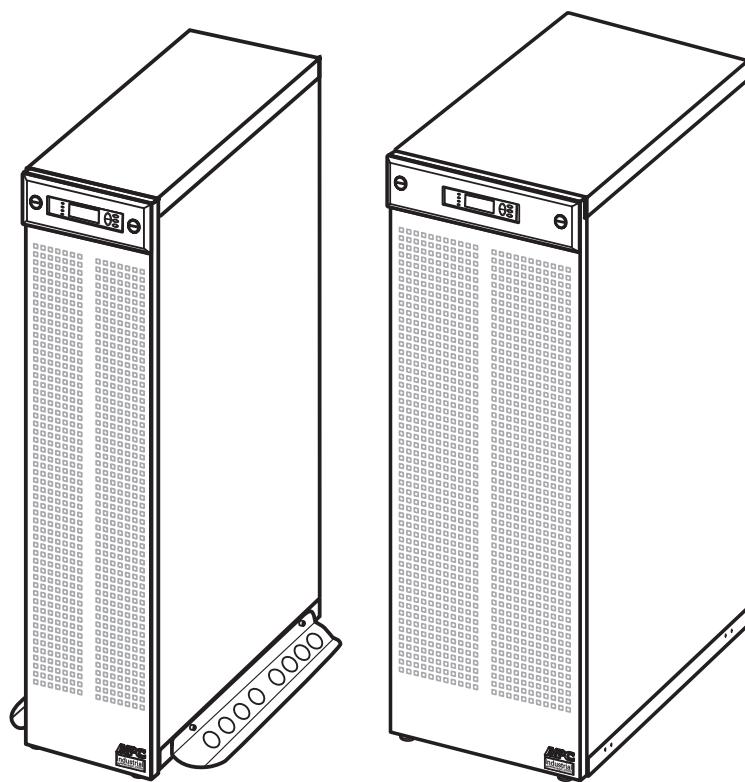
**10-30kVA
208V**

**Site Preparation and
Installation Manual**



AIS® 3000 10-30kVA 208V

Site Preparation and Installation Manual



IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS

This manual contains important instructions for the ISVT series that should be followed during installation and maintenance of the UPS and batteries.

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Introduction

Welcome to the Site Preparation and Installation Manual for the AIS® 3000. This manual contains information on how to prepare your site for the installation of the UPS and optional APC equipment (also available at www.apc.com) and instructions on how to carry out the electrical and mechanical installation.

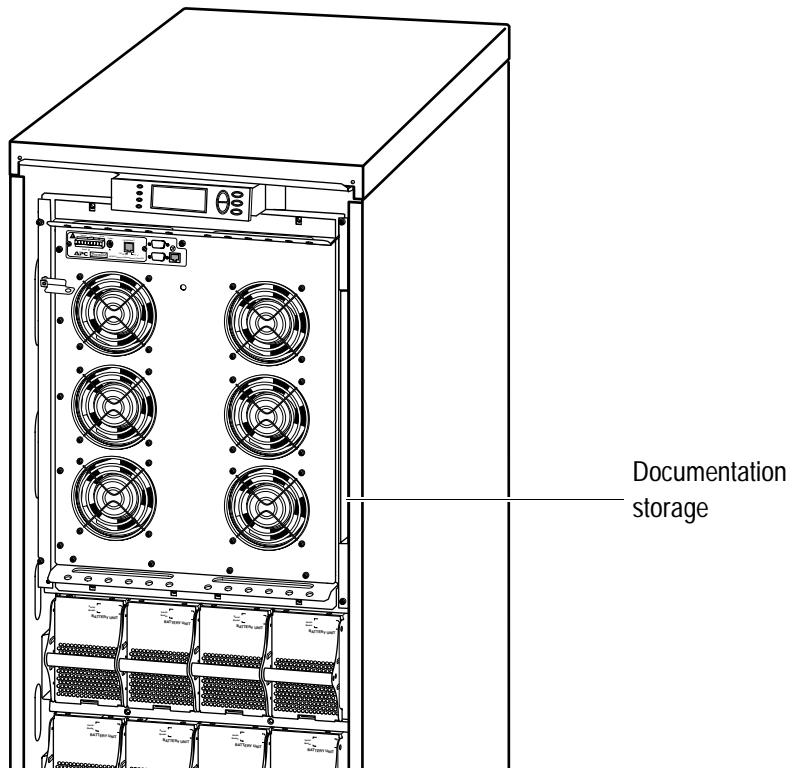
Separate manuals are available on:

- Receiving and Unpacking - part # 990-1961
- Operation - part # 990-1962



Note

The user manuals are provided in the documentation storage area at the top right corner on the UPS (behind the Front Panel).



Note

For more information on APC products and services, visit us at www.apc.com



Note

Most illustrations show 20.59in/523 mm Enclosures but apply to both Enclosure sizes. Any differences between the two Enclosure sizes will be addressed in the manual.

General Safety Instructions

This guide contains important instructions that should be followed when handling the UPS, Battery Enclosures, and Batteries.

Warning/note symbols



WARNING!

Risk of electric shock.



CAUTION!

Read this information to avoid equipment damage.



Note

Indicates important information.



Indicates that more information is available on this subject in a different section of this manual.



See also

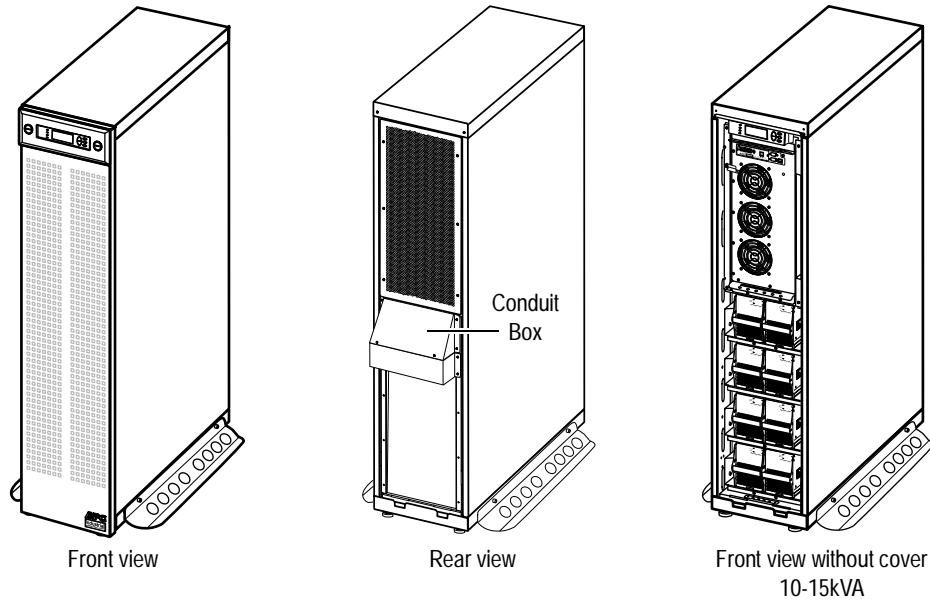
Indicates that more information is available on the same subject in a different manual.

Environmental symbols

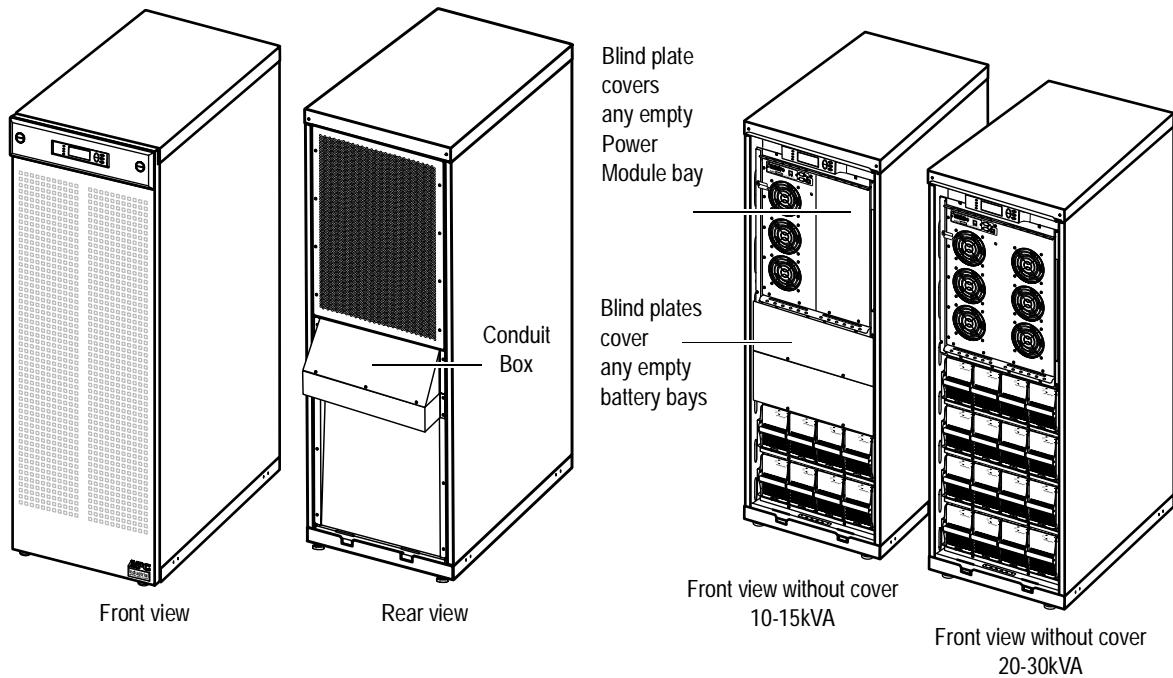
Temperature	Ventilation requirements	Humidity	Dust/Fumes	Altitude

UPS Family Range and Components

13.85in/352mm Enclosures



20.59in/523mm Enclosures

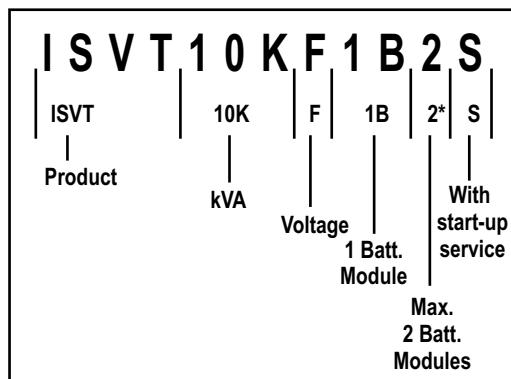


System sizes, part nos., number of Battery Modules and weights

Height (identical for all Enclosure sizes)	58.66in/1490mm		
Depth (identical for all Enclosure sizes)	33.62in/854mm		

System Size/ Enclosure width	APC Part No.	Installed weight		APC Part No.	Installed weight	
		lbs	kg		lbs	kg
10kVA 13.85in/352mm	ISVT10KF1B2S	678.8	308.7	ISVT10KF2B2S	889.9	404.7
10kVA 20.59in/523mm	ISVT10KF1B4S	759.4	345.4	ISVT10KF2B4S	970.5	441.4
10kVA 20.59in/523mm	ISVT10KF3B4S	1181.6	537.4	ISVT10KF4B4S	1392.7	633.4
15kVA 13.85in/352mm	ISVT15KF2B2S	889.9	404.7			
15kVA 20.59in/523mm	ISVT15KF2B4S	970.5	441.4	ISVT15KF3B4	1181.6	537.4
15kVA 20.59in/523mm	ISVT15KF4B4S	1392.7	633.4			
20kVA 20.59in/523mm	ISVT20KF2B4S	1037.9	472.0	ISVT20KF3B4S	1249.0	568.0
20kVA 20.59in/523mm	ISVT20KF4B4S	1460.1	664.0			
30kVA 20.59in/523mm	ISVT30KF3B4S	1251.2	569.0	ISVT30KF4B4S	1462.3	665.0

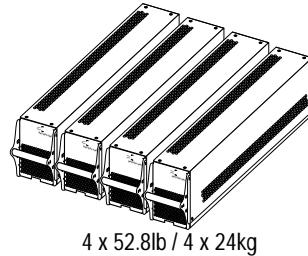
Part number coding:



*) 4 = max. 4 Battery Modules

Battery Module

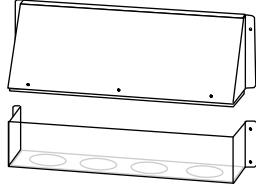
One Battery Module consists of 4 Battery Units (shipping in the UPS Enclosure).



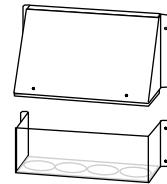
4 x 52.8lb / 4 x 24kg

Conduit Box

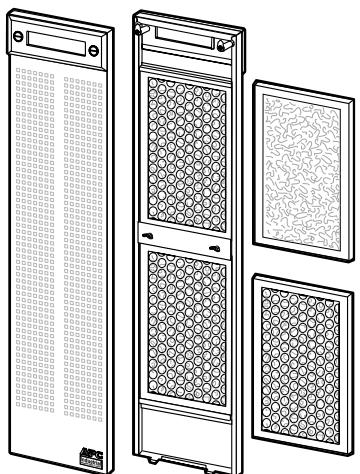
Conduit Box for
20.59in/523mm
Enclosure



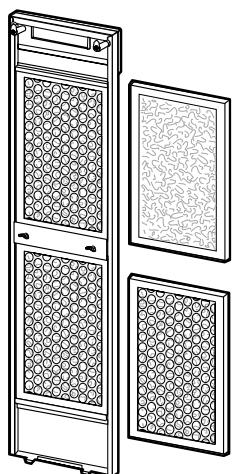
Conduit Box for
13.85in/352mm
Enclosure



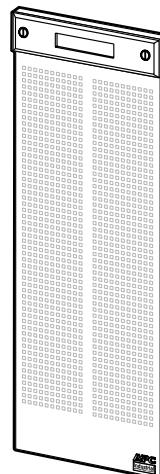
Front Panel overview



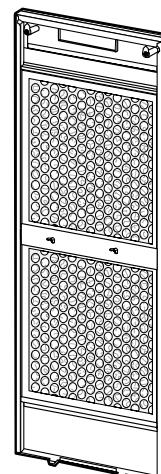
Front Panel
for 13.85in/
352mm
Enclosure



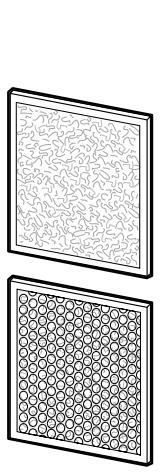
13.85in/
352mm
Enclosure
from front
and rear
with filters



Front Panel
for 20.59in/
523mm
Enclosure



20.59in/
523mm
Enclosure
from front
and rear
with filters



Filter seen
from front
and rear



Front Panel attachment procedure described in the *Front Panel* section.

Stabilizing Bracket

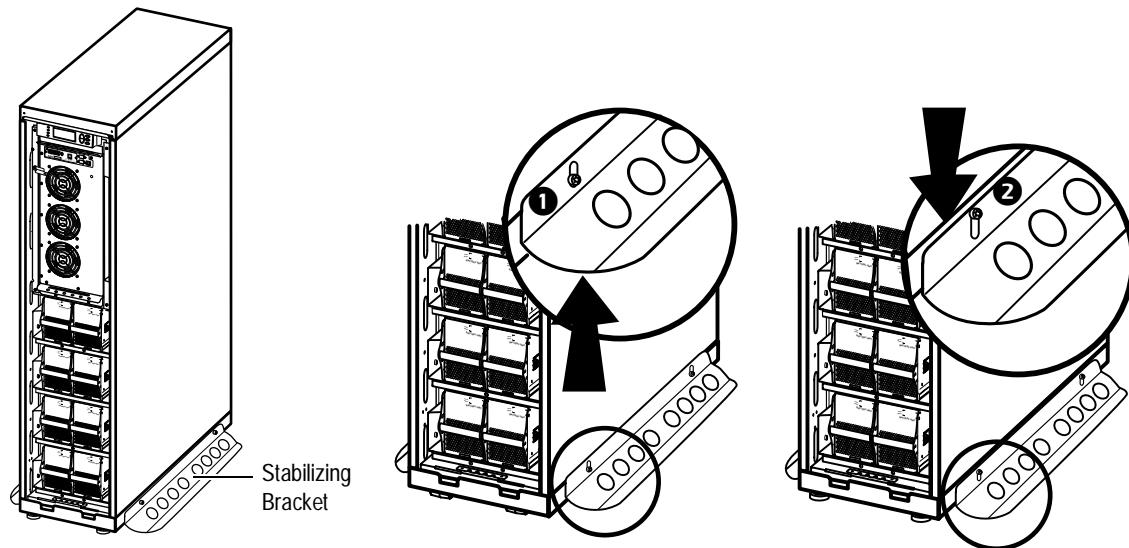
Always install the Stabilizing Brackets on the 13.85in/352mm Enclosure (shipped with the UPS) to enhance the stability of the Enclosure.



Note

In non-seismic areas, it is not necessary to bolt the Stabilizing Bracket to the floor.

Attach the Stabilizing Bracket to the UPS Enclosure only, re-using the screws used to secure the UPS to the pallet during shipment.



If the Enclosure needs to be moved after Stabilizing Brackets have been attached to the Enclosure, the Stabilizing Brackets must be pushed up into their high position.

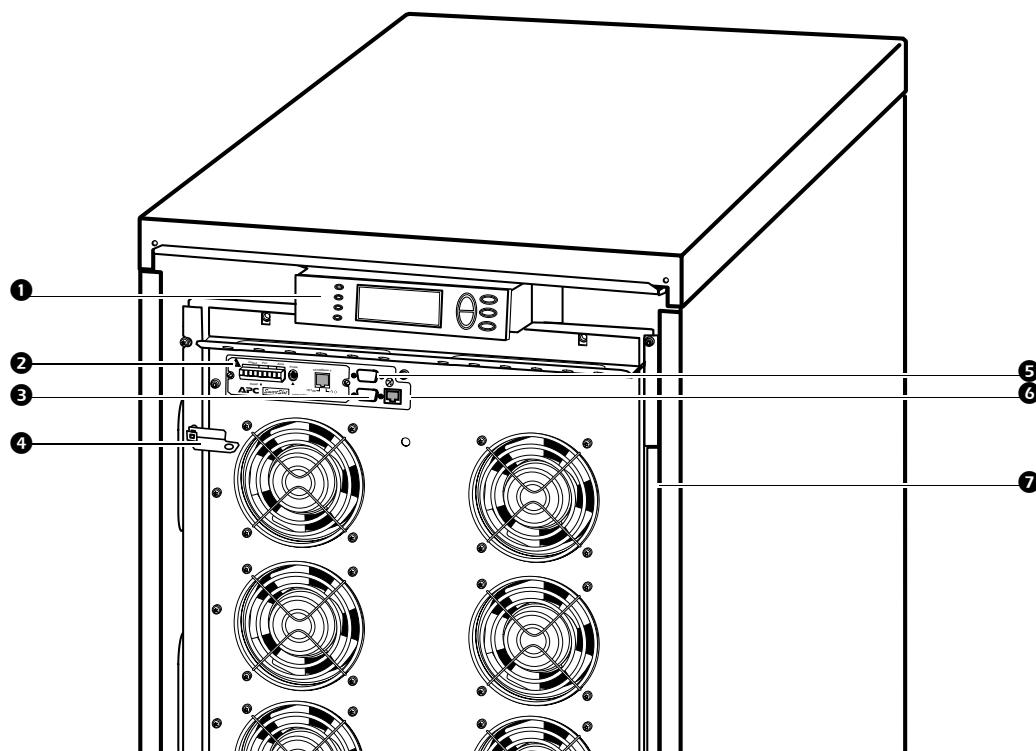
- ① Loosen the two screws of both Stabilizing Brackets, and push the bracket up into the high position.
- ② When the Enclosure has reached its new position, push the Bracket into its “down” position again, and tighten the screws.



WARNING!

For stability reasons, do not remove Stabilizing Brackets from 13.85in/352mm Enclosures.

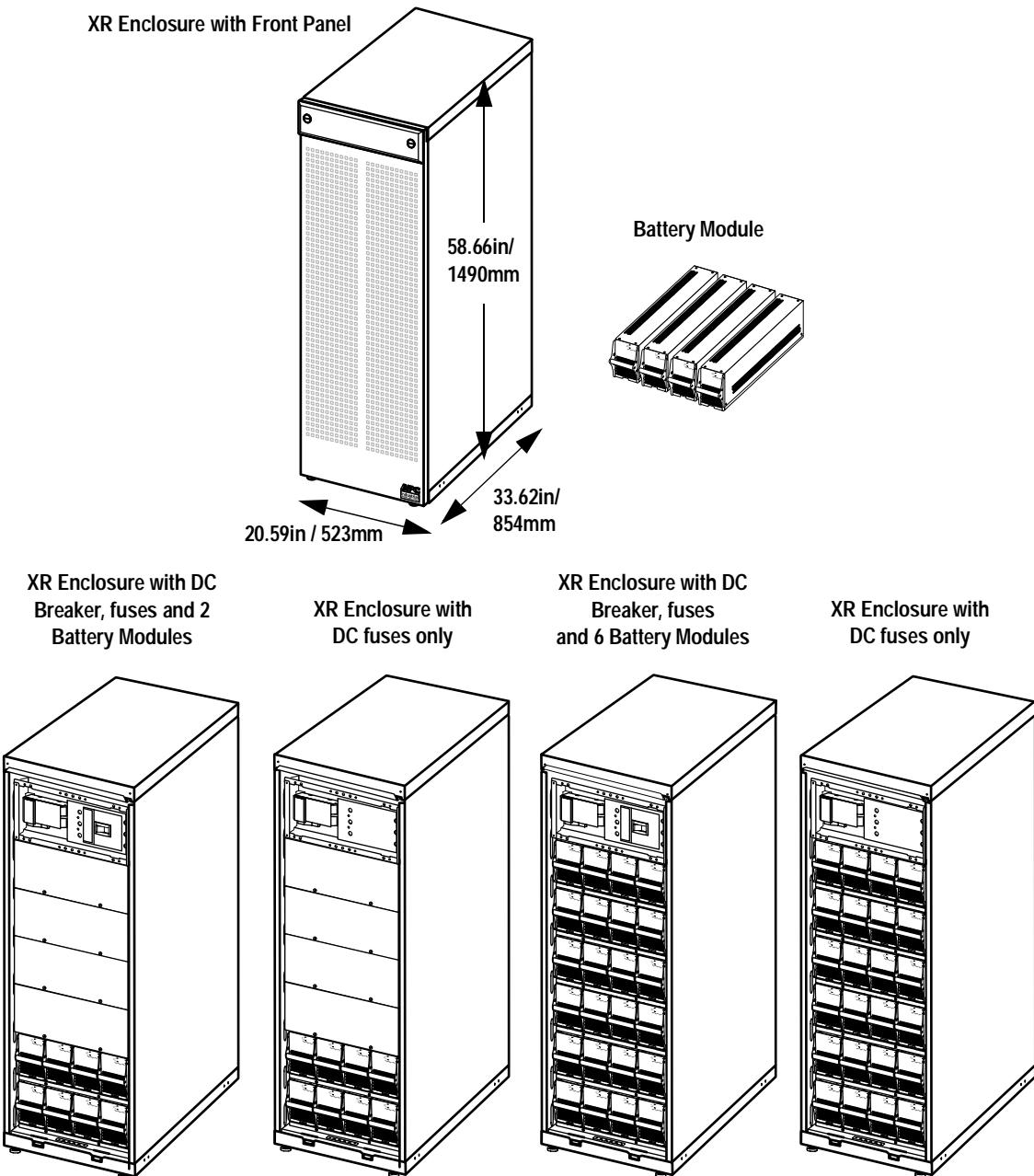
User interface



- ① Display: user-control interface used to configure the functionality, monitor the system, set alarm thresholds, and to provide audible and visual alarms.
- ② Network Management Card with Environmental Monitor (AP9619): used for remote system control and monitoring, e-mail notifications etc. See separate manual for the AP9619.
- ③ Computer-interface port for the connection of computers with APC Powerchute® software.
- ④ Mechanical bypass lever: used to bypass the upstream utility power around the UPS to support the load directly = internal mechanical bypass operation.
- ⑤ Service port (for APC maintenance personnel only).
- ⑥ Display port for the connection of display communication cable.
- ⑦ Documentation storage.

Options

Extended Run Battery Enclosure (XR Enclosure) and Battery Module



XR Enclosure weights:

2 Battery Modules	903.3lbs / 410.8kg
6 Battery Modules (4 of the modules are shipped separately on a pallet)	1747.8lbs / 794.8kg

Battery Module weight	
4 units = 1 Battery Module	4x52.8lb / 4x24kg

Part Numbers for XR Enclosures

XR Enclosure	
Enclosure with 2 Battery Modules (expandable to 6), and DC breaker:	ISVTBXR2B6S
Enclosure with 2 Battery Modules (expandable to 6), without DC breaker:	ISVTXR2B6S
Enclosure with 6 Battery Modules, and DC breaker:	ISVTBXR6B6S
Enclosure with 6 Battery Modules, without DC breaker	ISVTXR6B6S

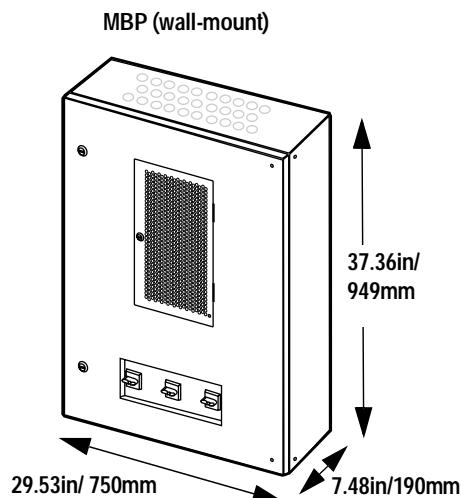
Part Number for Battery Module

Battery Module	
Battery Module	SYBT4

Maintenance Bypass Panels with Power Distribution Capability



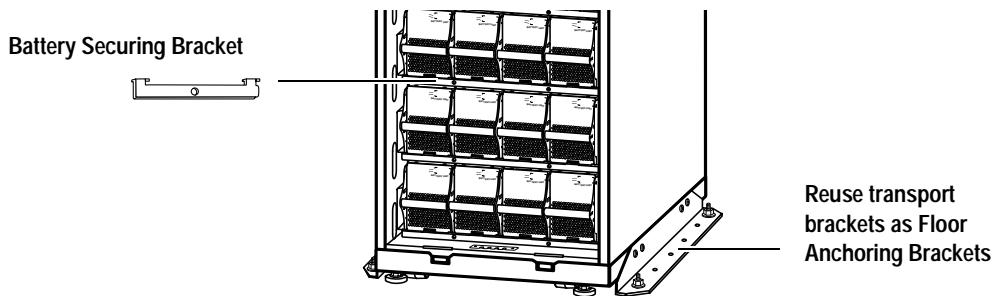
Further details on APC Maintenance Bypass Panel (MBP) with Power Distribution Capability are available on www.apc.com.



The Maintenance Bypass Panel provides overcurrent protection to the entire UPS system. It is also used to bypass the utility power around the UPS instead of through the system, e.g. when UPS maintenance is carried out.

Floor anchoring and battery securing equipment

In seismic areas, each Battery Module must be secured with a Battery Securing Bracket.



Note

Floor-anchoring bolts are not provided with the UPS. Purchase the floor anchors locally.



Note

For more details on optional APC equipment for the AIS® 3000, contact APC Technical Support in the U.S. at 800-555-2725. For other countries, see technical support numbers on rear cover.

Site Preparation (UPS and XR)

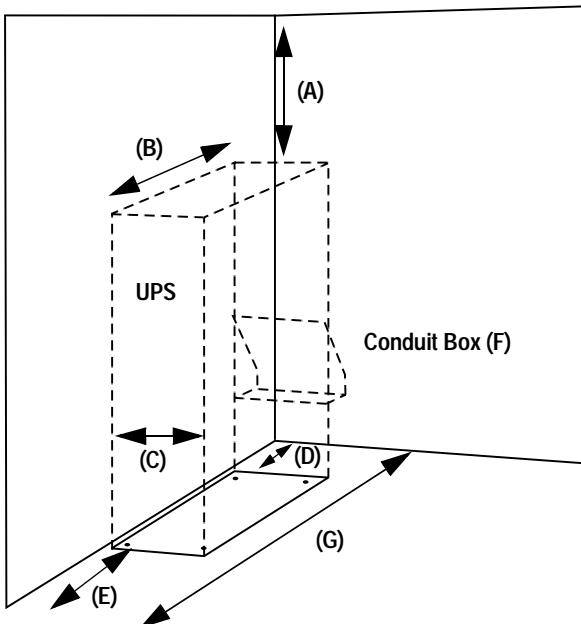
Installation Space Requirements



Note

Allow for enough working space behind the Enclosure for electrical work to be carried out (e.g. if you want to connect an XR Enclosure at a later stage).

Clearance for 20.59in/523mm Enclosures



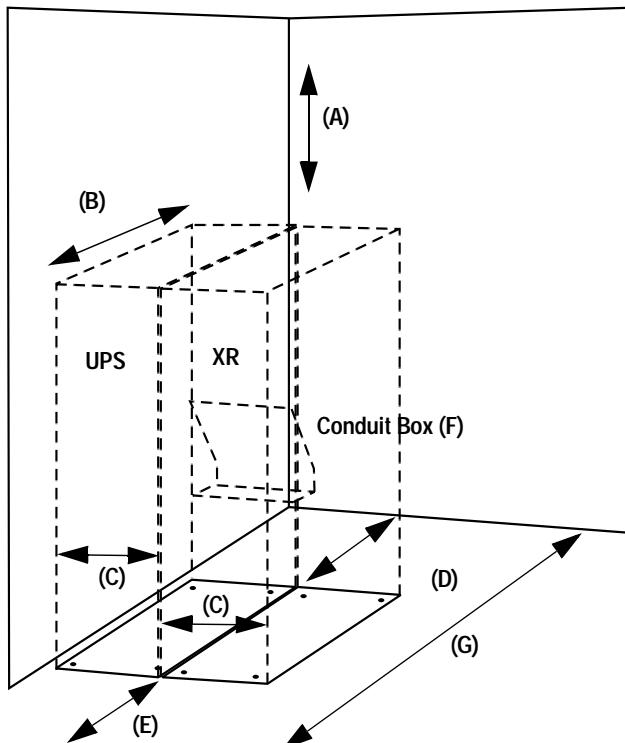
Space requirements	in	mm
Minimum clearance above Enclosure (A)	20	508
Enclosure depth (B)	33.62	854
Enclosure width (C)	20.59	523
Minimum free rear space for ventilation* (D)	4	100
Minimum front clearance (E)	39.37	1000
Conduit Box, depth (F)	3.46	88
No side clearance required (add width of Enclosure Stabilizing Brackets for floor anchoring if applicable)*	0	0
Stabilizing Bracket width	3.34	85
Total installation depth, inclusive of Front Panel, Conduit Box and minimum front and rear clearances (G)	80.39	2042

*) All physical installations must comply with NEC 110.26.

Clearance for 20.59in/523mm Enclosures in installations including an XR Enclosure

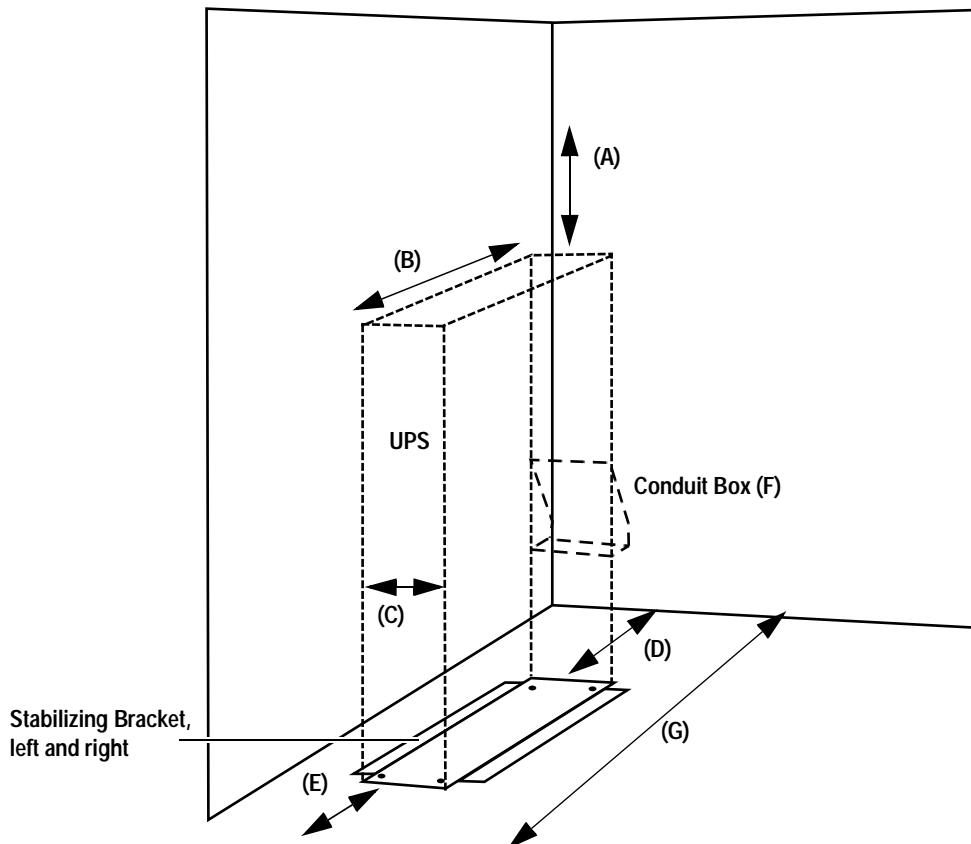


As floor anchoring is carried out prior to wiring (and to busbar connection between UPS and XR Enclosures if applicable), allow for sufficient working space behind the unit for electrical work to be carried out (including busbar connections between Enclosures if applicable).



Space requirements	in	mm
Minimum clearance above Enclosures (A)	20	508
Enclosure depth (B)	33.62	854
Enclosure width (C)	20.59 (x 2)	523 (x 2)
Minimum free rear space for ventilation* (D)	4	100
Minimum front clearance (E)	39.37	1000
Conduit Box, depth (F)	3.46	88
No side clearance required (include width of Stabilizing Bracket for floor anchoring if applicable)*	0	0
Stabilizing Bracket width	3.34	85
Total installation depth, inclusive of Front Panel, Conduit Box and minimum front and rear clearances (G)	80.39	2042

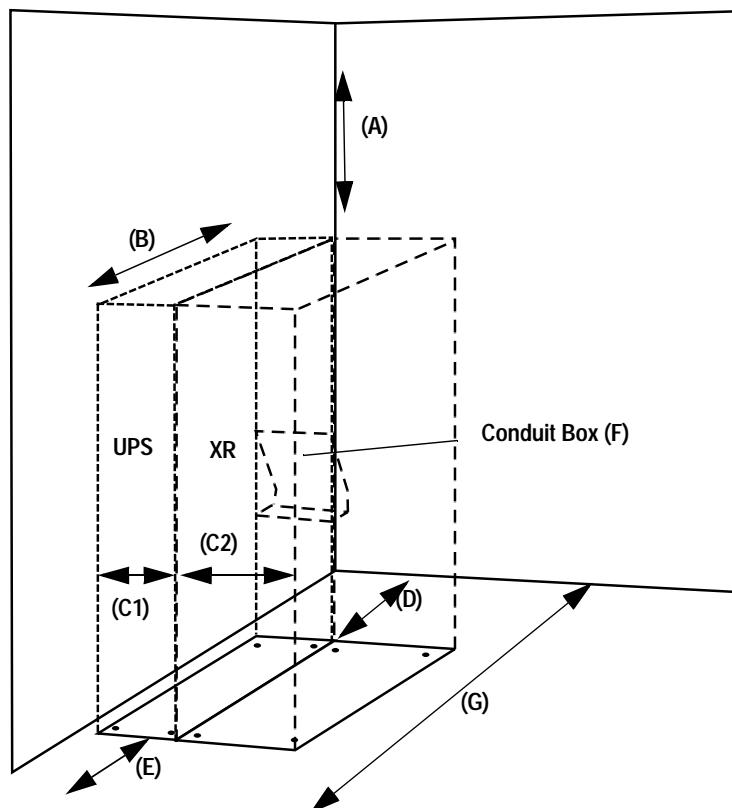
*) All physical installations must comply with NEC 110.26.

Clearance for stand-alone 13.85in/352mm Enclosures

Space requirements	in	mm
Minimum clearance above UPS (A)	20	508
UPS depth (B)	33.62	854
UPS width	13.85	352
Minimum free rear space for ventilation* (D)	4	100
Minimum front clearance (E)	39.37	1000
Conduit Box, depth (F)	3.46	88
No side clearance required (add width of Stabilizing Bracket for floor anchoring if applicable)*	0	0
Stabilizing Bracket width	3.34	85
Total installation depth, inclusive of Front Panel, Conduit Box and minimum front and rear clearances (G)	80.39	2042

*) All physical installations must comply with NEC 110.26.

Clearance for 13.85in/352mm Enclosures in installations including XR Enclosures



Space requirements	in	mm
Minimum clearance above Enclosures (A)	20	508
Enclosure depth (B)	33.62	854
Enclosure width (C1)	13.85	352
Enclosure width (C2)	20.59	523
Minimum free rear space for ventilation* (D)	4	100
Minimum front clearance (E)	39.37	1000
Conduit Box, depth (F)	3.46	88
No side clearance required (add width of Stabilizing Bracket for floor anchoring if applicable)*	0	0
Stabilizing Bracket width	3.34	85
Total installation depth, inclusive of Front Panel, Conduit Box and minimum front and rear clearances (G)	80.39	2042

*) All physical installations must comply with NEC 110.26.



For the stability of 13.85/352 mm stand-alone Enclosures, the transport brackets (re-use of brackets used to secure the UPS to the shipping pallet) must always be mounted on both sides of the UPS. Follow the Floor Anchoring procedures.

Floor Anchoring Preparation



Note

If floor anchoring and battery securing is required in your area, read this section. If not, proceed to *Operating Environment*. However, if you install a 13.85in/352mm Enclosure, it must always be equipped with the Enclosure Stabilizing Bracket for enhanced stability (not necessary to bolt the Enclosure Stabilizing Bracket to the floor in non-seismic areas).

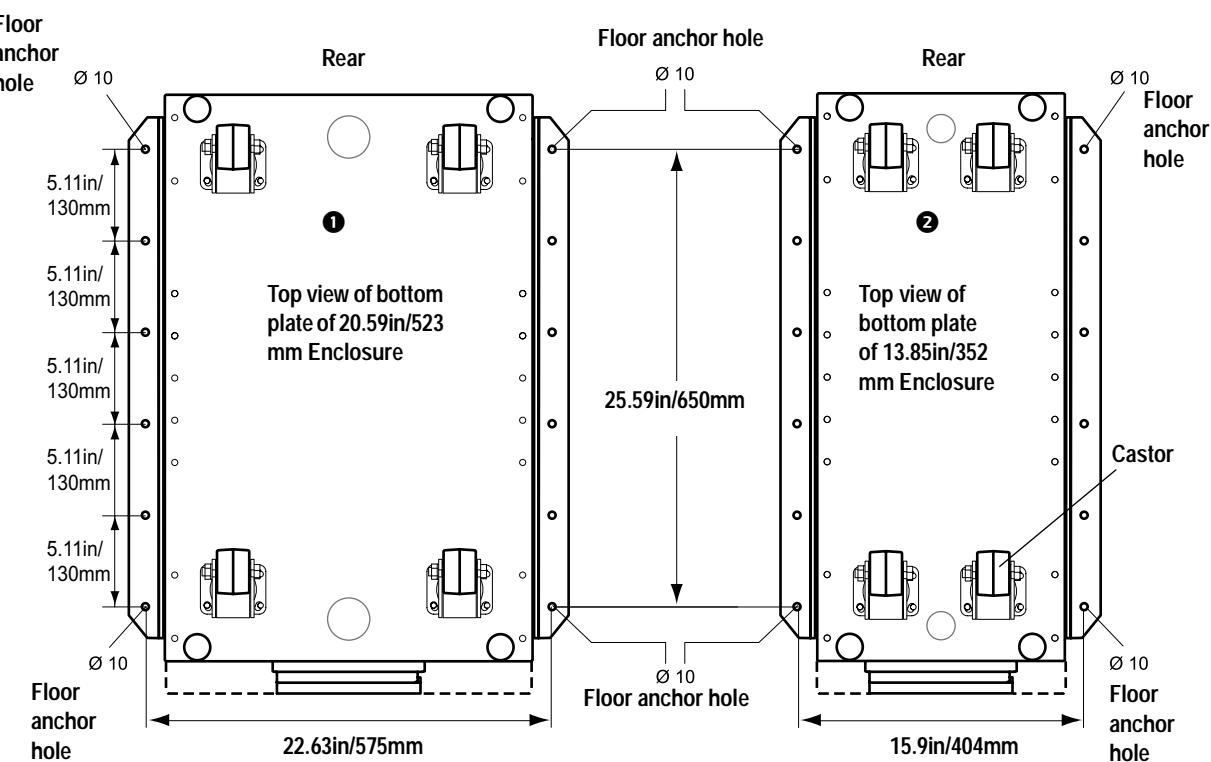
Drilling floor holes for floor anchoring



Note

If your UPS installation requires floor anchoring and battery securing, the UPS installation must be anchored to the floor, re-using the brackets that secured the Enclosure to the pallets during shipment. For easy determination of where to drill the holes, refer to the applicable drawings below indicating hole positions and size.

Hole positions for floor anchors (stand-alone Enclosures)



① Refer to this drawing for floor anchor positions for 20.59in/523mm Enclosures.

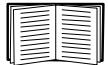
② Refer to this drawing for 13.85in/352mm Enclosures.



Note

Recommended minimum number of floor bolts per Enclosure: 4 (1 in each corner).

Recommended floor bolt size: 5/16in/8mm.



Floor Anchoring procedure described in the *Installation* section of this manual.

Operating Environment

Operating conditions



Note

Install the UPS in an indoor, temperature-controlled area, free of conductive contaminants.

Temperature Range: 32° to 104°F / 0° to 40°C	Keep Ventilated Front-to-Rear Airflow (see space considerations)	Relative Humidity: <95% Non-condensing	No Conductive Dust or Corrosive Fumes	Altitude derating table: 3000ft/914m: 100% load 4500ft/1371m: 95% load 6000ft/1828m: 91% load 8000ft/2438m: 86% load 10000ft/3048m: 82% load

Heat dissipation

UPS size	BTU/hr at fully charged batteries
10kVA	1,774
15kVA	2,866
20kVA	3,624
30kVA	5,486

Audible noise

	10-15kVA	20-30kVA
Audible noise at 100% load: (measured 1.09yard/1m from the UPS)	64dBA	67dBA

Recommended source connections

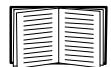


The UPS must be supplied from a 208Y/120V 4W + GND 60Hz source.



CAUTION!

Verify clockwise phase-rotation (L1, L2, L3) and make sure a neutral connection is present.



See also *Recommended Wiring for a 86°F (30°C) Temperature Environment*.

Recommended current protection

AC output over-current protection and AC output disconnect must be provided by the customer.

Dual/single mains configuration	Connection	10kVA	15kVA	20kVA	30kVA	Notes
Single	Mains/bypass input	35A breaker (30 kAIC)	60A breaker (30 kAIC)	80A breaker (30 kAIC)	125A breaker (30 kAIC)	
Dual	Mains input	35A breaker (30 kAIC)	60A breaker (30 kAIC)	80A breaker (30 kAIC)	125A breaker (30 kAIC)	1,2
Dual	Bypass input	35A breaker (30 kAIC)	60A breaker (30 kAIC)	80A breaker (30 kAIC)	125A breaker (30 kAIC)	1,2
Any	Output	35A fast-acting class J fuse	60A fast-acting class J fuse	80A fast-acting class J fuse	125A fast-acting class J fuse	3,4

Note 1:

If the available fault current of the installation is below 30kA, a lower kAIC-rated breaker can be used.

Note 2:

For breaker settings, refer to below table listing available overload currents.

Note 3:

If the available fault current of the installation is less than 1200A for the 10kVA and 15kVA UPS sizes, and below 2300A for the 20kVA and 30kVA UPS sizes, a breaker (of the same value as for the bypass input) can be used.

Note 4:

Recommended maximum rating of a single-fuse configuration if the internal bypass is to be protected during a load short-circuit.

Minimum setting of breakers for 10kVA UPS

Overload Event	Mains input	Bypass input	Output	Duration	Notes
Internal fault	2kA	1.7kA	14kA	<10ms	1
800% overload bypass operation	–	223A	223A	500ms	
150% overload normal/battery operation	–	–	42A	30s	
125% overload normal/battery operation	–	–	35A	60s	
Continuously	34A	31A	31A	∞	

Note 1: For the output value, the short-circuit-level is indicated.

Minimum setting of breakers for 15kVA UPS

Overload Event	Mains input	Bypass input	Output	Duration	Notes
Internal fault	2.5kA	2.1kA	14kA	<10ms	1
800% overload bypass operation	–	333A	333A	500ms	
150% overload normal/battery operation	–	–	63A	30s	
125% overload normal/battery operation	–	–	52A	60s	
Continuously	51A	46A	46A	∞	

Note 1: For the output value, the short-circuit-level is indicated

Minimum setting of breakers for 20kVA UPS

Overload Event	Mains input	Bypass input	Output	Duration	Notes
Internal fault	4 kA	3.4kA	14 kA	<10ms	1
800% overload bypass operation	–	444A	444A	500ms	
150% overload normal/battery operation	–	–	84A	30s	
125% overload normal/battery operation	–	–	70A	60s	
Continuously	68A	62A	62A	∞	

Note 1: For the output value, the short-circuit-level is indicated.

Minimum setting of breakers for 30kVA UPS

Overload Event	Mains input	Bypass input	Output	Duration	Notes
Internal fault	5 kA	4.2 kA	14 kA	<10 ms	1
800% overload bypass operation	–	667A	667A	500ms	
150% overload normal/battery operation	–	–	125A	30s	
125% overload normal/battery operation	–	–	105A	60s	
Continuously	102A	92A	92A	∞	

Note 1: For the output value, the short-circuit level is indicated.

Recommended phase-conductor sizes [AWG] for a 86°F (30°C) temperature environment

UPS/AWG sizes	Mains input [AWG]	AC output [AWG]	DC input [AWG], 75°C Wire
10kVA	8	8	1
15kVA	6	6	1
20kVA	4	4	1
30kVA	1	1	1



Note

Use Molex lug type or equivalent, and crimp to manufacturer's specifications.

Cable Size [AWG]	Cable Lug Type	Crimping Tool	Die	Terminal Bolt Diameter
12	YA12CL2TC38	MD7-34R	W12CVT	0.2in/6mm
8	YA8CL2TC38	MD7-34R	W8CVT	0.2in/6mm
6	YA6CL2TC38	MD7-34R	W5CVT	0.2in/6mm
4	YA4CL2TC38	MD7-34R	W4CVT	0.2in/6mm
1	YA1CL2TC38	MD7-34R	W1CVT	0.2in/6mm

WARNING!



At 100% non-linear load (EN50091-3 standard), the neutral shall be rated for 200% phase current.

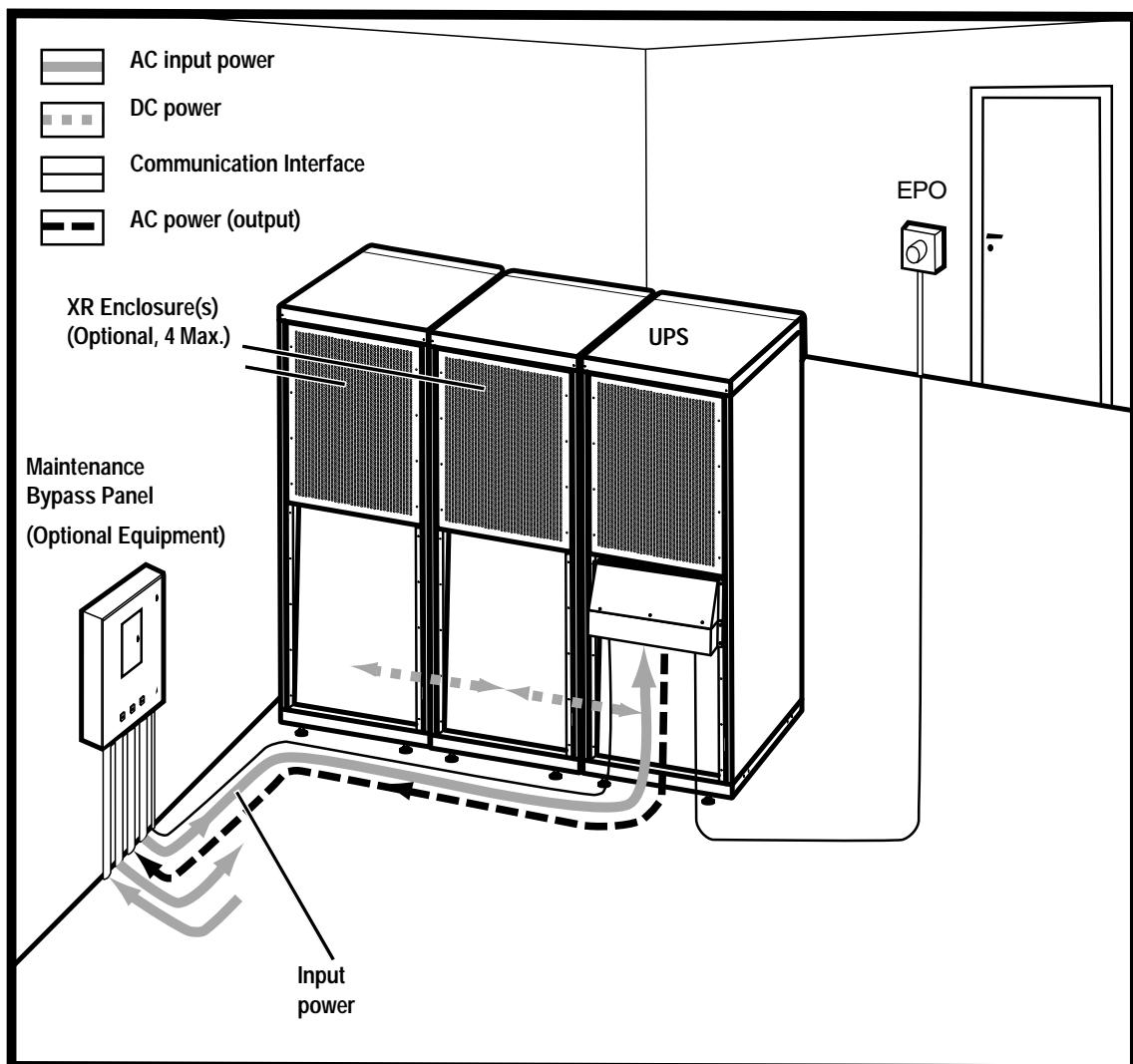
EPO switch wiring

The UPS must be connected to either a dry contact or a 24V_{DC} Emergency Power Off (EPO) switch.



See *EPO wiring options* in this manual.

Basic Wiring Overview



APC recommends that you request a wiring diagram from the electrician after completed electrical installation. A wiring diagram is useful for subsequent service and troubleshooting.

Site Preparation Checklist

System components. Have you –

- determined minimum battery runtime requirement based on load (kW and kVA) and selected the correct APC XR Enclosures (ISVTBXR2B6S, ISVTXR2B6S, ISVTBXR6B6S, ISVTXR6B6S) and Battery Unit (SYBT1). Always install a whole Battery Module (4 Battery Units) at a time.
- considered Service Program or Extended Warranty plan?

Site Preparation. Have you –

- considered correct operating space, floor strength (see *Installation Space Requirements*), cooling, and environment (see *Operating Environment*).
- reviewed all electrical work to determine wiring requirements?

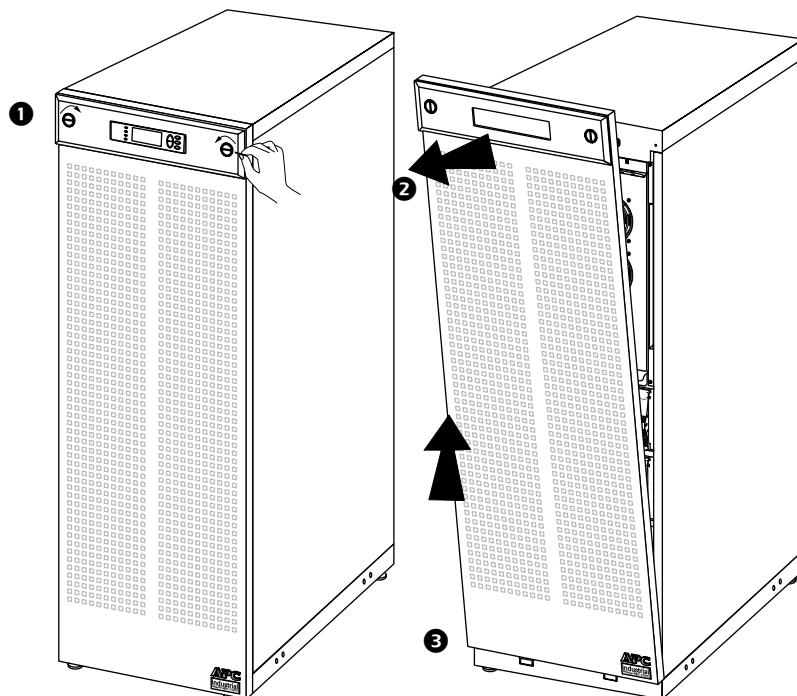
Arrival Preparation. Have you –

- verified that space and handling equipment are available to receive the XR Enclosure? (Including unloading the XR Enclosure from the delivery truck).
- scheduled an authorized electrician to install the XR Enclosure?

Electrical Installation

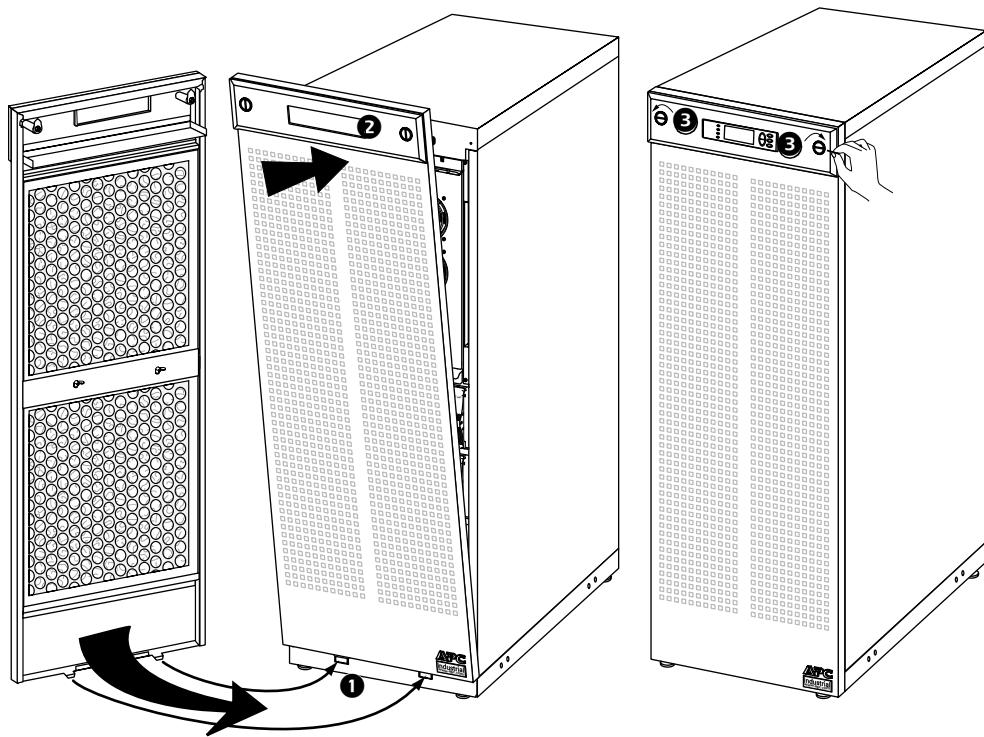
Front Panel

Removal



- ① To remove a Front Panel, use a coin or similar, and turn the 2 black lock devices on either side of the Display in direction of each other to vertical level.
- ② Pull the Front Panel outwards to disengage the locking device at the top of the Enclosure.
- ③ Lift the Front Panel free of the two slots at the bottom of the Enclosure.

Installation



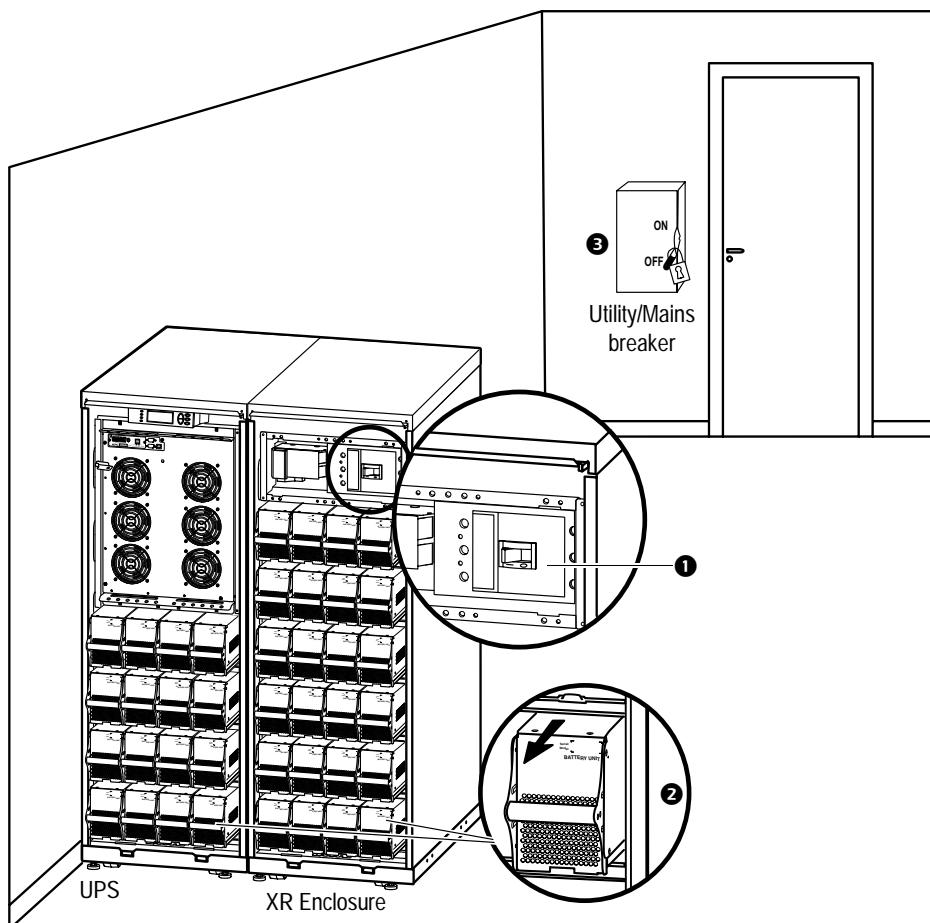
- ①** To install a Front Panel, insert the two guide tabs positioned at the bottom of the Front Panel into the two slots at the bottom of the Enclosure.
- ②** Push the Front Panel against the Enclosure to engage the locking device at the top of the Enclosure.
- ③** To secure the Front Panel, use a coin or similar to turn the 2 black lock devices on either side of the Display away from each other (left lock counterclockwise, right lock clockwise) to horizontal level.

Total-Power-Off Procedure

WARNING!



Risk of electric shock - parts inside the UPS and XR Enclosure are energized from the battery supply even when the AC power is disconnected. Before electrical installation begins, follow the Total-Power-Off procedure to completely de-energize the system.



- ① Set the DC disconnect switch on the XR Enclosure (if available) to the OFF position.
- ② Remove all batteries from the system, or, alternatively, pull out all batteries to the red disconnect line shown on the battery. To ensure solid stability, do not pull batteries out beyond the red disconnect line unless completely removing them from the Enclosure.
- ③ Set the utility/mains breaker to the OFF or LOCKED-OUT position. If the UPS has dual mains supply, set both supplies to the OFF or LOCKED-OUT position.



Refer to *Seismic Anchoring* in the Electrical Installation Manual for instructions on how to remove Seismic Battery Brackets (if applicable).



WARNING!

Correct lock-out procedures at utility/mains breaker must be followed. If necessary, install a padlock.

System-Electrical Information

WARNING!



All electrical power and power control wiring must be installed by a qualified electrician, and must comply with local and national regulations for maximum power rating.

UPS ratings	10 kVA 8 kW	15 kVA 12 kW	20kVA 16 kW	30 kVA 24 kW
Input voltage / Bypass voltage (V)	3-phase 208Y/ 120V	3-phase 208Y/ 120V	3phase 208Y/ 120V	3-phase 208Y/ 120V
Input current (nominal, per phase) (A)	24.6	36.9	49.3	73.9
Maximum input current per phase (continuous, at minimum mains voltage)	27.1	40.6	54.2	81.3
Input current protection for mains source or single mains supply (external to UPS, not supplied) (A)	3x35	3x60	3x80	3x125
Input current protection for bypass source in dual mains configuration (external to UPS, not supplied) (A)	35	60	80	125
Input frequency (Hz) range	40-70	40-70	40-70	40-70
Output voltage (on line). (V) Minimum and maximum values (+/- 1%)	120/208	120/208	120/208	120/208
Output current (nominal, per phase) (A)	27.8	43.3	55.5	83.3
Maximum output current (in bypass only at 110% overload per phase)	30.5	45.8	51.1	91.6
Bypass input current (A) (in bypass only at 110% overload, per phase)	30.5	45.8	51.1	91.6
Neutral output current (with 100% switch mode load) (A)	48.1	74.9	96.0	144.1
Output current protection (external to UPS, not supplied) (A)	40	60	80	125
Output frequency range (Hz)	50/60	50/60	50/60	50/60
DC overcurrent protection and disconnect switch for external safety: DC voltage rating of the battery supply Maximum available short-circuit current	23 +/- 192 10 kA	35 +/- 192 10 kA	46 +/- 192 10 kA	69 +/- 192 10 kA

Source connections



WARNING!

The UPS must be supplied from a 208Y/120V 4W + GND 60Hz source.



CAUTION!

Verify clockwise phase-rotation (L1, L2, L3) and make sure a neutral connection is present.



For recommended source connections, see *The Site Preparation* section.



CAUTION!

The installation must comply with all local and national codes.



Refer to NEC Articles 310-15, 310-16 for further information.

See also

Wiring



Note

Make sure the UPS is in its location of use before wiring begins.



CAUTION!

Verify clockwise phase-rotation (L1, L2, L3) and make sure a neutral connection (N) is present.



Note

Power terminal lug diameter: minimum 0.2in/6mm.

Torque value: 45 lbf-in/5Nm



Note

If floor anchoring is required, attach the Floor Anchoring Brackets to the UPS now.

Follow step 1 under *Floor Anchoring (Option)*.



Note

Please leave a copy of your wiring diagram with the customer to facilitate maintenance and troubleshooting.

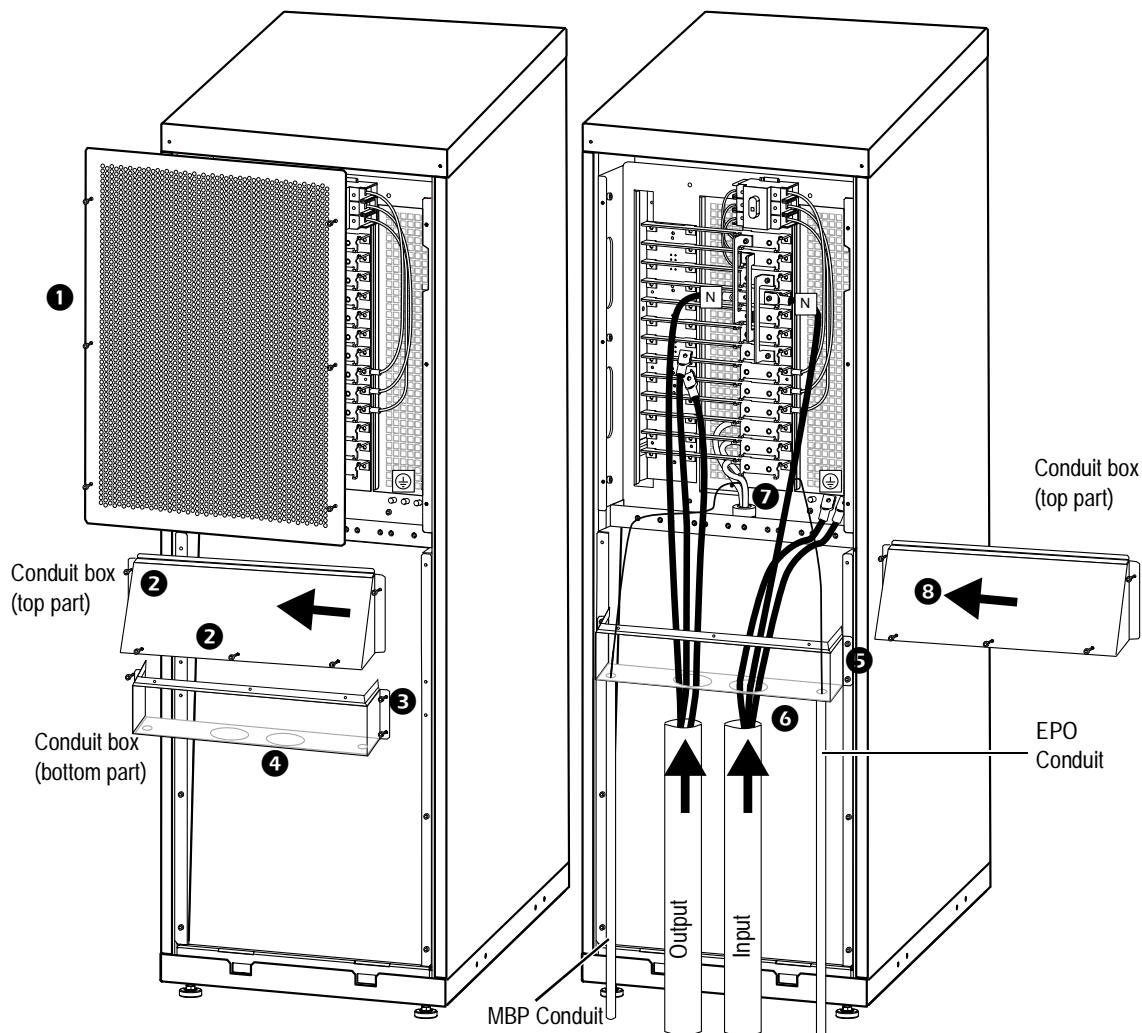
Input/Output Wiring – Single Mains (default)

The UPS is designed for both single (default) and dual mains installations. Carry out the *Total Power Off Procedure*, and follow the below steps to install the UPS in a single-mains installation.



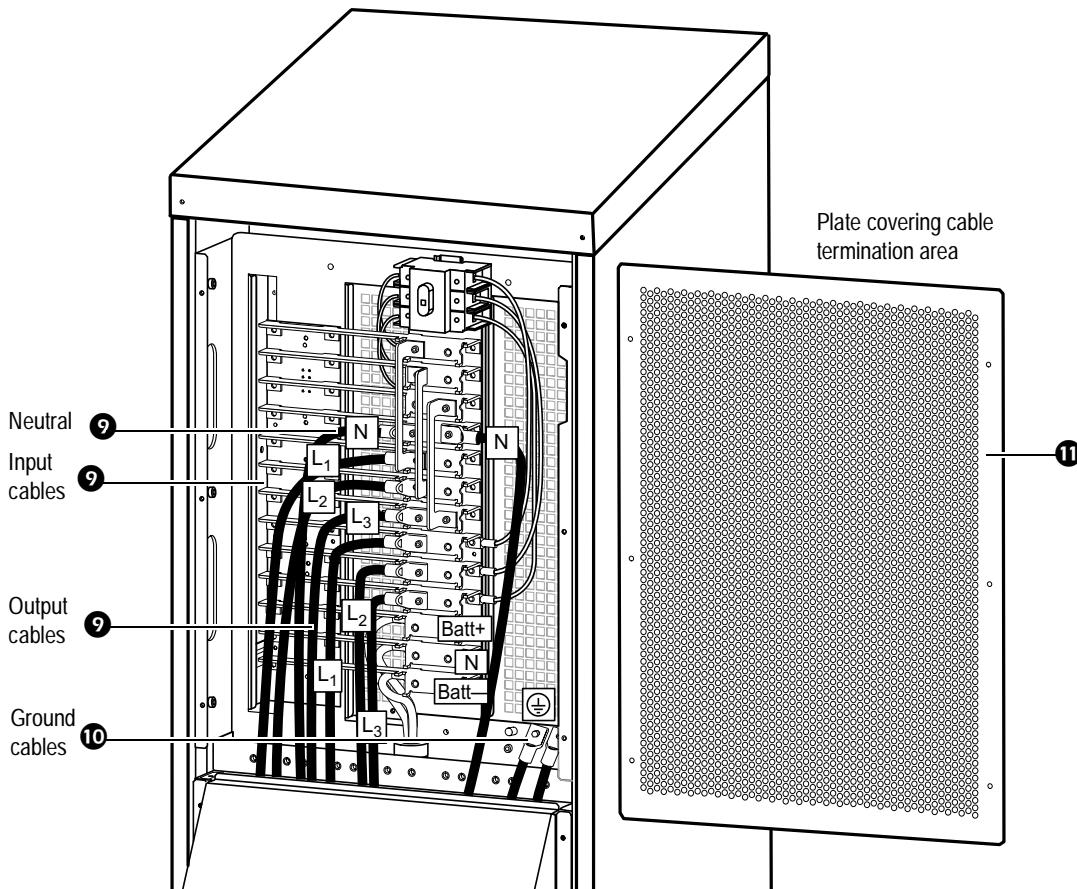
Note The illustrations show a 20.59in/523mm Enclosure, but installation procedures are identical for 13.85in/352mm Enclosures).

Wiring procedure - single mains



- ① Loosen the (6) M4x13 screws from the plate covering the cable termination area, and remove.
- ② Loosen the (2) M4x13 screws from the top part of the Conduit Box. Loosen the 3 M4x13 attaching it to the bottom part (2 screws in a 13.85in/352mm Enclosure) and remove.
- ③ Loosen the (4) M4x13 screws (2 each side) from the bottom part of the Conduit Box and remove.

- ❸ Punch 2 holes in the marked areas of the Conduit Box bottom to fit the size of the conduit pipes.
- ❹ Attach the Conduit Box bottom to the Enclosure, using (4) M4x13 screws.
- ❺ Install conduit pipes in the Conduit Box.
- ❻ Run cables through the conduit pipes and the bottom of the Conduit Box, guides cables up into the input/output area.
- ❼ Install the top part of the Conduit Box to the Enclosure.



- ❽ Attach input cable lugs on L1, L2 and L3 input busbars (left side in the UPS), using the provided M6 hex screws. Attach output cable lugs on L1, L2 and L3 output busbars, using the provided M6 hex screws. Attach N x 2 where shown, using the provided hex screws.
- ❾ Attach Ground x 2 where shown, using the provided hex screws.
- ❿ Reinstall the Plate, following reversed deinstallation procedures.

Input/Output Wiring – Dual Mains

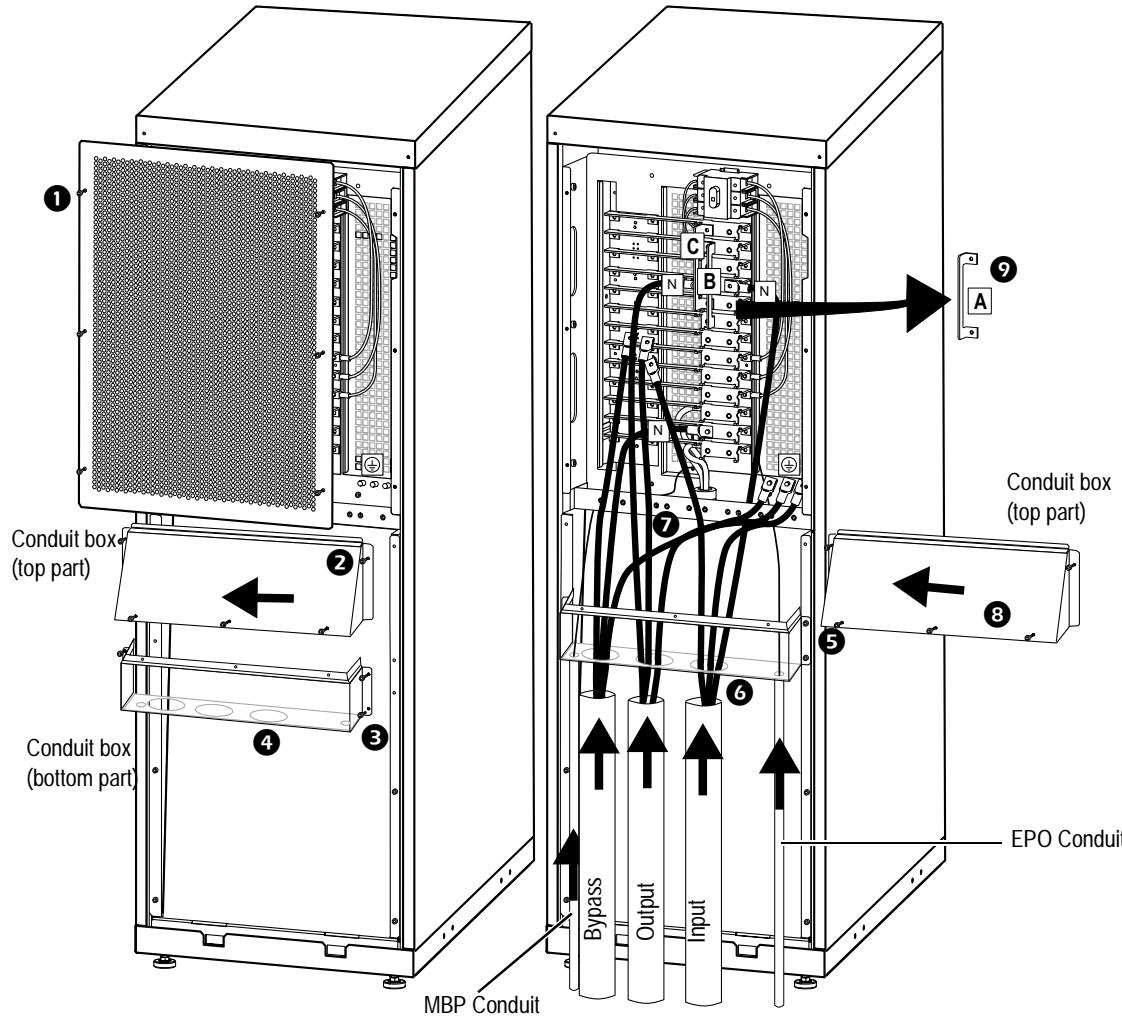
The UPS is designed for single mains installation as default. Carry out the *Total Power Off Procedure*, and follow the below instructions to install the UPS in a dual-mains installation



Note

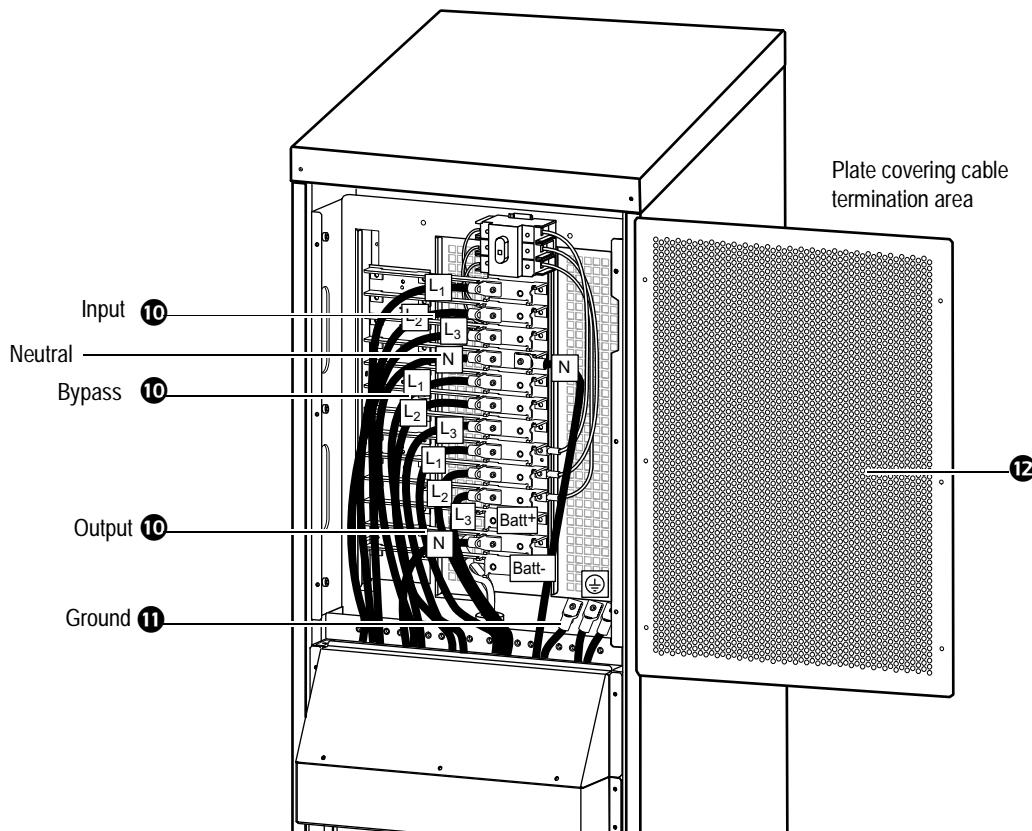
The illustrations show 20.59in/523mm Enclosures, but the installation procedures are identical for 13.85in/352mm Enclosures).

Wiring procedure - dual mains



- ① Loosen the (6) M4x13 screws from the plate covering the cable termination area, and remove.
- ② Loosen the (2) M4x13 screws from the top part of the Conduit Box. Loosen the 3 M4x13 attaching it to the bottom part (2 screws in a 13.85in/352mm Enclosure) and remove.
- ③ Loosen the (4) M4x13 screws (2 each side) from the bottom part of the Conduit Box and remove.

- ④ Punch 3 holes in the Conduit Box bottom to fit the size of the conduit pipes.
- ⑤ Attach the Conduit Box bottom to the Enclosure, using (4) M4x13 screws.
- ⑥ Install conduit pipes in the Conduit Box bottom.
- ⑦ Run cables through the conduit pipes and the bottom of the Conduit Box. Guide the cables up into the input/output area.
- ⑧ Install the top part of the Conduit Box to the Enclosure.
- ⑨ Remove the (2) M6x12 screws from Brackets A, B, and C and remove all 3 brackets.



- ⑩ Attach the input cable lugs to input busbars L1, L2, L3, using the provided hex screws. Attach the bypass cable lugs to L1, L2, L3 bypass busbars, using the provided hex screws. Attach the output cable lugs to the L1, L2, L3 output busbars and attach, using the provided hex screws. Attach N x 3 where shown., using the provided hex screws.
- ⑪ Attach Ground x 3 where shown.
- ⑫ Reinstall the Plate, following reversed deinstallation procedures (described in a previous step).

Communication Wiring to EPO and Optional Equipment



Note

EPO switch must be connected to a NEC Class 2 wiring.



Note

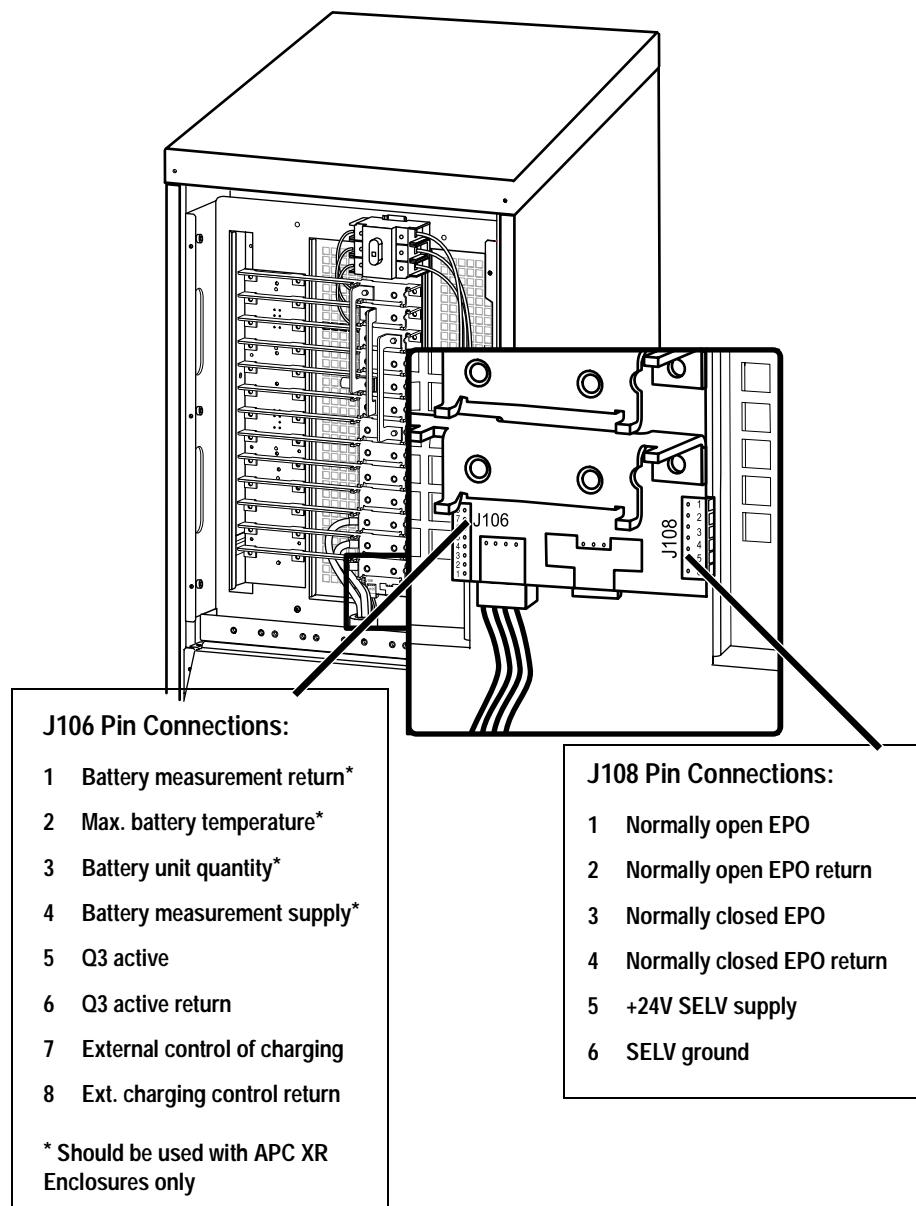
Use only 28-16AWG copper wire for the connection of the Emergency Power Off (EPO) and other optional equipment. Keep all other wiring and uninsulated live parts separate of other NEC Class 2 circuits.



Note

Do not connect any circuits to the EPO terminal block unless it can be confirmed that the circuit is a NEC Class 2 circuit.

Pin connections J106 (XR Enclosure) and J108 (EPO)



Pin connections J106 (UPS) to J200 (XR Enclosure - option)

Pins 1 through 4 are for battery measurement (only applicable to APC XR Enclosures).

Pins 5 & 6 are for external maintenance bypass Q3. When Q3 is closed, signals are fed back to the UPS controller.

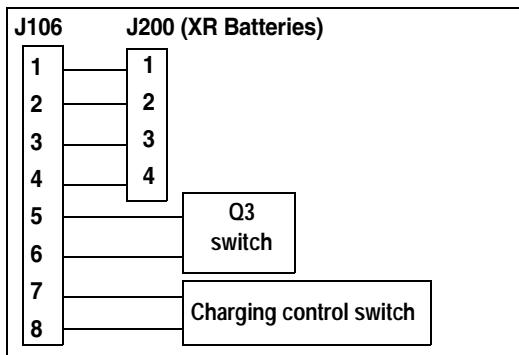
Pins 7 & 8 are for external charge control. When 7 & 8 are closed, the UPS charges batteries with a pre-defined percentage (0-100%) of the maximum charging power. To be used in generator applications, or if special codes require control of charging.



Note

When connecting the Q3 auxiliary signal, use gold-plated N/C auxiliary switch on Q3.

XR Enclosure, APC MBP, and Generator Control wiring



Pins 1 through 4 are for battery measurement (only applicable to APC XR Enclosures).

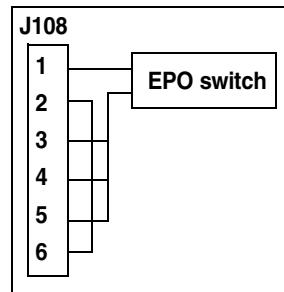
Pins 5 through 6 are for external maintenance bypass Q3.

Pins 7 and 8 are for external charge control.

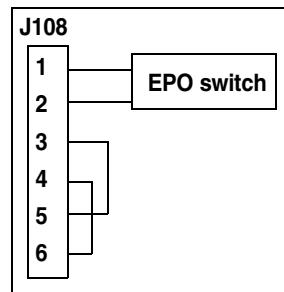
Pin connections J108 (for EPO wiring options)

Connect the EPO cable, using one of the following 4 wiring configurations.

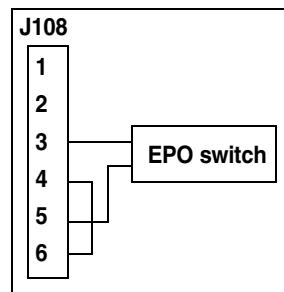
- 1: Dry Contracts
Normally Open



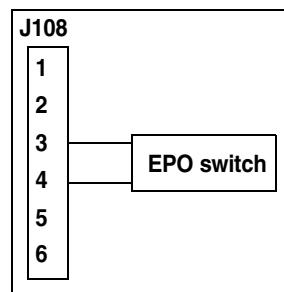
- 2: +24V Normally Open



- 3: Dry Contacts
Normally Closed



- 4: +24V Normally
Closed



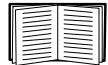
See *EPO wiring options* for setup.

General Charge Setting

The general charge setting is set to 100% as default.

From the Display it is possible to adjust the charge levels to 75%, 50%, 25%, 10% and 0%.

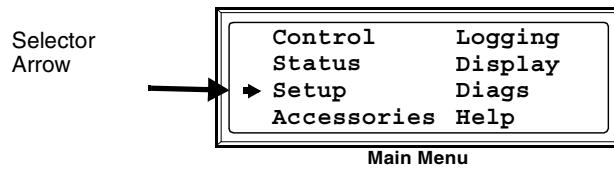
If the charge limit input is active (J106, pins 7,8) the UPS will reduce the maximum General Charge effect (100%) to the programmed value.



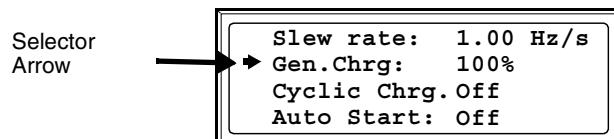
See *XR Enclosure, MBP, and Generator Control Wiring* for overview of J106.

Charge setting procedure

- ① From the main menu of the display, select *Set-up*, and press ENTER.



- ② Select System, and press ENTER
- ③ Use the arrow keys to get to *Gen.Chrg: 100%*, and press ENTER.



- ④ An arrow will appear to the left of Gen.Chrg. Use the UP arrow on the display to go to the desired level of charge effect. Select ENTER.

Now, when the charge limit input is active, the UPS will charge to the new setting.

Leveling Feet

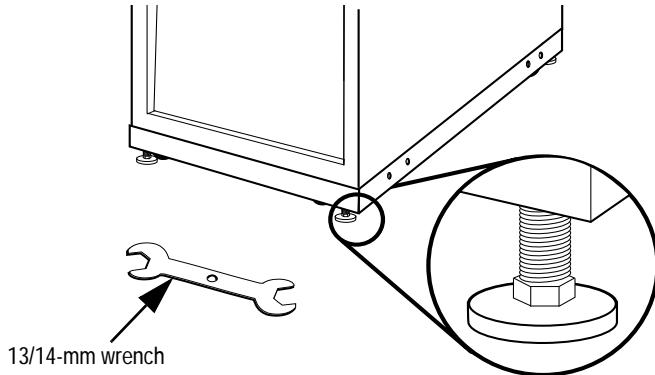


Note

Verify that the installation has been electrically wired before setting the leveling feet.

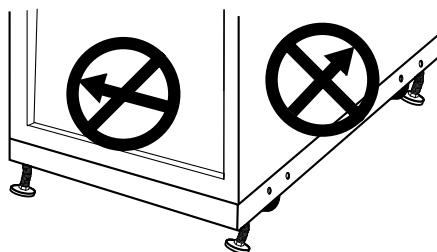
Setting the leveling feet

Set the leveling feet to ensure the UPS is horizontal when it is in its final operating position. Use a 13/14-mm wrench (shipped with UPS) to adjust all 4 leveling feet from front to back, and left to right, until the pads make solid contact with the floor. Use a level tube to check the Enclosure is horizontal.



CAUTION!

To avoid equipment damage, do not push or pull the UPS after the leveling feet have been lowered.



Remember to install the Front Panel. See *Front Panel* section.

If Floor Anchoring and Battery Securing are required, carry out these procedures first.

Floor Anchoring (option)



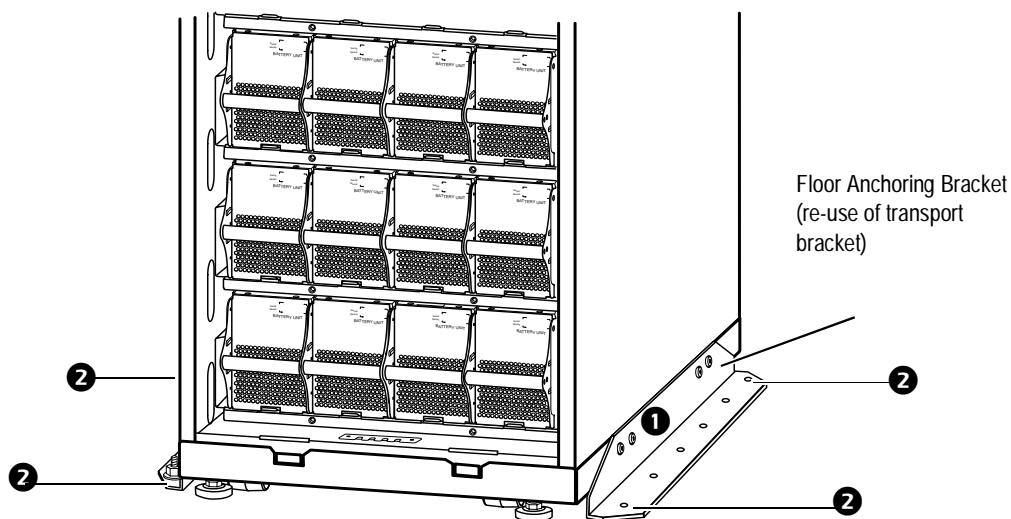
Note

Floor anchoring is an option. If your installation does not include this option, proceed to the *Front Panel Installation* section.

Floor anchoring of stand-alone systems

In seismic areas, it is recommended that the installation be bolted to the floor, and that the batteries be secured in the Enclosure by the Battery Securing Brackets.

- ❶ For floor anchoring, use the 2 transport brackets that were used to secure the UPS to the pallet during transport.



- ❷ Align the 4 holes in the bottom angle of the Floor Anchoring Bracket on either side of the UPS to the pre-drilled holes in the floor



Note

Floor anchoring procedures identical for both 13.85in/352mm and 20.59in/523 mm UPS Enclosures.

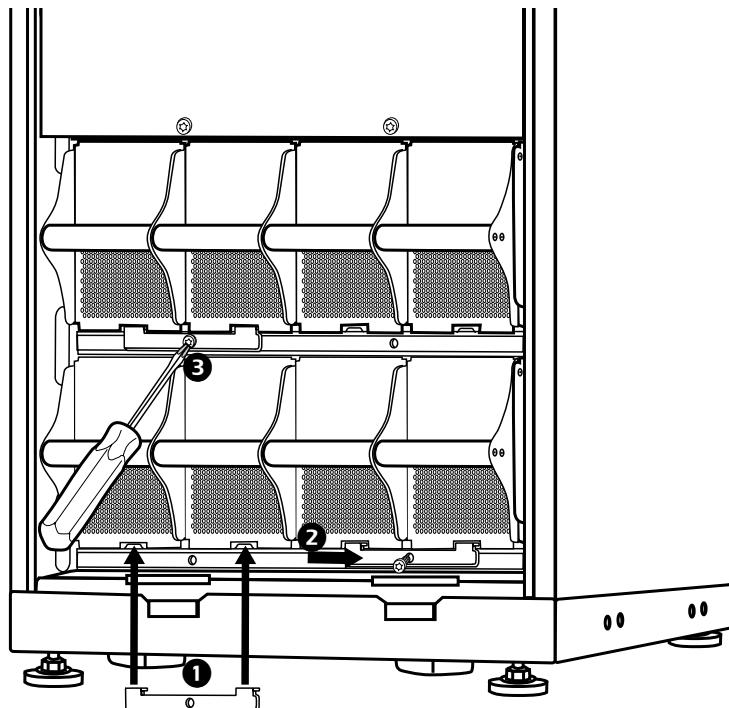


See also

See *Floor Anchoring Preparation* section and install a minimum of 4 anchors on each Enclosure (minimum size: M8) where shown, following the specifications provided by the manufacturer.

Battery securing

Attach two Battery Securing Brackets per Battery Module in such a way that one bracket secures two Battery Units.



- ① Insert the two tabs of the Battery Securing Bracket into the slots of the two Battery Units.
- ② Push the Battery Securing Bracket to the right and push it downwards. Align the Battery Securing Bracket hole with the hole in the battery shelf.
- ③ Use one M6 screw to fasten the Battery Securing Bracket to the shelf.

Use same procedure to secure all batteries in the Enclosure.



Note

Attach two Battery Securing Brackets per Battery Module in such a way that one Battery Securing Bracket secures two Battery Units.

Wiring Verification Procedure



Note

Do not connect batteries in the UPS.

Use following procedure to verify that the UPS has been wired properly:

- 1. If your installation includes an XR Enclosure, make sure that the DC breaker (if available) is in the OFF position and that both 125A fuses are removed from the XR Enclosure.
- 2. Check that the power wiring is torqued to 45 lbf·in/5Nm.
- 3. If your installation includes an XR Enclosure, remount the 125A fuses in the XR Enclosure and check that the DC breaker (if available) on the XR Enclosure is in the ON position.
- 4. Apply utility power to the system input and measure the voltage at the input terminal block. Record voltages between:

Mains Input:

L1 and N: _____ L2 and N: _____ L3 and N: _____

Bypass Input (for dual mains installations):

L1 and N: _____ L2 and N: _____ L3 and N: _____



Note

Measured voltage must be between 96 and 130. If not, STOP! Verify correct wiring (correct location of N) from the power source to the input wiring connections.

- 5. Check that the display is powered up.
- 6. Select the Status Menu on the display, and check that all input voltages are present.
- 7. Verify L1, L2, L3 clockwise phase rotation using a phase-rotation meter.
- 8. Test the EPO switch. The system should shut down completely. If not, check the connections and the EPO switch to ensure that they are installed and functioning correctly. For installations with XR Battery Enclosures, the DC disconnect should trip to the OFF position at the EPO test (if applicable).
- 9. Successful completion of steps 1 through 5 indicates that the UPS wiring is correctly installed and functioning correctly. Turn off breakers and switches and shut down utility power to the system input. See *Total-Power-Off* Procedure.
- 10. Please leave a wiring diagram on site for service / technical support personnel.



Note

If a problem occurs, phone Customer Support at (1) (800) 800-4272 (US and Canada). Refer to rear cover for contact numbers in other countries.

- 10. Reinstall all wiring access panels and Front Panels to the UPS.



Note

If you have purchased any optional equipment, refer to product-specific manuals.

Installation Site Checklist

This checklist should be completed by the electrician after the wiring has been completed:

Installed at (company name, date, contact) _____

Name and telephone number of electrician: _____

UPS serial number: _____

Input Circuit Breaker size and type: _____

Output fuse size and type: _____

Location of protection devices (room): _____

Breaker ID: _____

EPO type: _____

Wire size and type: _____

Ground connection method and location: _____

Carried out wiring diagram and left it with the UPS: _____

LIMITED FACTORY WARRANTY

The limited warranty provided by American Power Conversion Corporation (“APC”) in this Statement of Limited Factory Warranty applies only to Products you purchase for your commercial or industrial use in the ordinary course of your business.

APC product covered

AIS® 3000 and AIS® 3000 Extended Run Battery Enclosure

Terms of warranty

APC warrants that the Product shall be free from defects in materials and workmanship for a period of one (1) year from the date of start-up when APC authorized service personnel performed the start-up of the Product, or a maximum of 18 months from the date of Product shipment from APC, when APC authorized service personnel have not performed the start-up of the Product (“Warranty Period”). In the event that the Product fails to meet the foregoing warranty, APC shall repair or replace any defective parts, such repair or replacement to be without charge for on-site labor and travel if APC authorized personnel have conducted start-up of the Product. An APC Start-Up Service must be performed/completed by APC authorized service personnel or replacement of defective parts only will be covered. APC shall have no liability and no obligation to repair the installed Product if non-authorized personnel performed the start-up and such start-up caused the Product to be defective. Any parts furnished under this warranty may be new or factory-remanufactured. **Repair or replacement of a defective product or part thereof does not extend the original warranty period.**

Non-transferable warranty extends to first purchaser for use

This Warranty is extended to the first person, firm, association or corporation (herein referred to by “You” or “Your”) for whom the APC Product specified herein has been purchased. This Warranty is not transferable or assignable without the prior written permission of APC.

Assignment of warranties

APC will assign to you any warranties which are made by manufacturers and suppliers of components of the APC Product and which are assignable. Any such warranties are assigned “AS IS” and APC makes **no representations** as to the effectiveness or extent of such warranties, assumes **NO RESPONSIBILITY** for any matters which may be warranted by such manufacturers or suppliers and extends no coverage under this Warranty to such components.

Drawings, descriptions

APC warrants for the Warranty Period and on the terms of the Warranty set forth herein that the APC Product will substantially conform to the descriptions contained in the APC Official Published Specifications or any of the drawings certified and agreed to by an authorized APC representative, if applicable thereto (“Specifications”). It is understood that the Specifications are **not warranties of performance** and **not warranties of fitness for a particular purpose**.

Warranty claims procedure

To obtain service under Warranty, contact APC Customer Support (see rear cover). You will need the model number of the Product, the serial number, and the date purchased. A technician will ask you to describe the problem. If it is determined that the Product will need to be returned to APC you must obtain a returned material authorization (RMA) number from APC Customer Support. Products that must be returned must have the RMA number marked on the outside of the package, and be returned with transportation charges prepaid. If it is determined by APC Customer Support that on-site repair of the Product is allowed, APC will arrange to have APC authorized service personnel dispatched to the Product location to repair or replace the Product at the discretion of APC.

Exclusions

APC shall not be liable under the Warranty if its testing and examination discloses that the alleged defect in the product does not exist or was caused by your or any third person's misuse, negligence, improper installation or testing, unauthorized attempts to repair or modify, or any other cause beyond the range of the intended use, or by accident, fire, lightning or other hazard.

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APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
 - **www.apc.com** (Corporate Headquarters)
Connect to localized APC Web sites for specific countries, each of which provides customer support information.
 - **www.apc.com/support/**
Global support searching APC Knowledge Base and using e-support.
- Contact an APC Customer Support center by telephone or e-mail.
 - Regional centers:

Direct InfraStruXure Customer Support Line	(1)(877)537-0607 (toll free)
APC headquarters U.S., Canada	(1)(800)800-4272 (toll free)
Latin America	(1)(401)789-5735 (USA)
Europe, Middle East, Africa	(353)(91)702000 (Ireland)
Japan	(0) 35434-2021
Australia, New Zealand, South Pacific area	(61) (2) 9955 9366 (Australia)

- Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

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